
STEP AP214 and VRML FreeCAD script generator

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this repository

<https://github.com/easyw/kicad-3d-models-in-freecad/>

is a place to find STEP AP214 3D models and VRML kicad 3D models under '**cadquery**'

DIR, there are some nice scripts that can generate

STEP and VRML parametric models for

GullWings ICs, DIP ICS, Chip Capacitors, Chip resistors, pin-strip headers

All the STEP and VRML models can be used with kicad new stable release (August 2015) and are ready to be used with Kicad StepUp script

kicad StepUp is a new approach to export kicad board and modules in STEP AP214 (with colors). With kicad StepUp it is possible to export the 3D board and modules in STEP for MCAD interchange and create the 3D wrl libraries.

[kicadStepUp at sourceforge](http://sourceforge.net/projects/kicadstepup/)¹

[kicadStepUp at lauchpad](http://bazaar.launchpad.net/~easyw/kicad-stepup/trunk/files/)²

[YouTube Kicad StepUp demo video](http://youtu.be/Ukd47VXYzQU)³

¹ <http://sourceforge.net/projects/kicadstepup/>

² <http://bazaar.launchpad.net/~easyw/kicad-stepup/trunk/files/>

³ <http://youtu.be/Ukd47VXYzQU>

Overview of the parametric scripts

this repository

<https://github.com/easyw/kicad-3d-models-in-freecad/>

is a place to find **STEP AP214 3D models and VRML kicad 3D models**;

under '**cadquery**' DIR, there are some nice scripts that can generate

STEP and VRML parametric models for

SOIC, SSOP, TSSOP, SOT, QFP ... (GullWings in general), QFN ICs, DIP ICs, Chip Capacitors, Chip resistors, pin-strip headers ready to go for **kicad StepUp script**

and **ready to go** 3D STEP and VRML models.

The parametric scripts are derived from CadQuery scripts for generating QFP, DIP and pinHeaders models in X3D format.

author hyOzd

author site: bitbucket.org/hyOzd/freecad-macros/

requirements

[CadQuery module](#)⁴ version 0.20 or later

[FreeCAD](#)⁵ version 0.15 or later (use only STABLE versions)

1. Running the scripts

to run the script just move to the scripts dir and do:

```
freecad ./make_gw_export_fc.py modelName
```

examples in win:

```
c:\freecad\bin\freecad make_gw_export_fc.py SOIC_8
```

```
c:\freecad\bin\freecad make_gw_export_fc.py all
```

in linux:

```
freecad ./make_gw_export_fc.py SOIC_8
```

```
freecad ./make_gw_export_fc.py all
```

modelName and parameters are described in:

1. `cq_params_gw_soic.py` file for defining SOIC mechanical data
2. `cq_params_gw_qfp.py` file for defining QFP mechanical data
3. `cq_params_gw_ssop.py` file for defining SSOP mechanical data

⁴ <https://github.com/jmwright/cadquery-freecad-module/archive/v0.2.0.zip/>

⁵ <http://freecadweb.org/>

4. cq_params_gw_tssop.py file for defining TSSOP mechanical data
5. cq_params_gw_sot.py file for defining SOT mechanical data
6. cq_params_chip_cap.py file for defining chip capacitors mechanical data
7. cq_params_chip_res.py file for defining chip resistors mechanical data

all data in parameter files are collected from components data sheets

the script will generate STEP and VRML parametric models ready to be used with kicad StepUp script

Note: You may get a *No module named QtNetwork* error on Ubuntu based systems when you select the module in FreeCAD. If you do, run the following command line from a terminal to fix this issue.

```
sudo apt-get install python-pyside.qtnetwork
```



For Debian users, because of some lib issues, FreeCAD fusion may result with monocrome objects [FreeCAD in Debian](#)⁶ to build your models you may consider to run FreeCAD in Lubuntu under virtualbox in Debian systems

2. credits

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FreeCAD & cadquery tools:

libraries to export generated models in STEP & VRML format

- cad tools functions
- routines to build modules

author *hyOzd*

basic freecad macros - author site: bitbucket.org/hyOzd/freecad-macros/

3. Copyright

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⁶ http://www.freecadweb.org/wiki/index.php?title=Download#Development_Versions

4. Risk disclaimer

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